Remarks/Arguments:

Claims 1-17, 30-39, and 41-43 are presently pending. Applicants herein amend claims 1, 17, 38, and 42. Reconsideration is respectfully requested in view of the above amendments and the following remarks.

Requirement for Information

The Office Action sets forth a requirement that Applicants provide answers to the following interrogatories:

1. What is the newly claimed "outer curved surface"?

Applicants herein amend claims 1 and 42 to remove the term "outer curved surface." Claim 1 now recites "the dorsal or ventral sides" of the plurality of blades. This feature is described in the application at page 10, lines 2-10, and FIG. 2. No new matter is added.

2. Is it clear that Chou fails to teach or suggest asperities beyond the fifty percent chord length? Why?

Chou recites that "[e]xperimental data indicates that the trip should be located on pressure surface 14 at a point that is about five to fifty percent of the blade chord length from leading edge 15." See Chou at column 2, lines 58-61. Chou fails to include any figure illustrating trip 21 located beyond the fifty percent chord length of blade 12. See FIGS. 3A-4D of Chou. No portion of Chou provides any reason to locate trip 21 beyond the fifty percent chord length of blade 12. Thus, Chou fails to disclose, teach, or suggest asperities beyond the fifty percent chord length.

3. Why would fifty percent necessarily distinguish "outer" from "inner," *per se*?

As set forth above, Applicants herein amend claims 1 and 42 to remove the term "outer curved surface." Claim 1 now recites "the dorsal or ventral sides" of the plurality of blades. Chou discloses trip 21 formed on the ventral side of blade 12.

4. Regarding Applicants' newly claimed limitation: "outer curved surface," why doesn't the FIG. 3b species of the JP 2002-168194 teach a turbulence generating means on the outer surface of its blade, or does it?

As set forth above, Applicants herein amend claims 1 and 42 to remove the term "outer curved surface." Claim 1 now recites "the dorsal or ventral sides" of the plurality of blades. JP 2002-168194 discloses swollen portions 11 formed on the dorsal side of blades 5.

Applicants respectfully submit that the above remarks answer the interrogatories. Accordingly, Applicants respectfully submit that the requirement for information is satisfied.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-17, 30-39, and 41-43 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite for including the term "an outer curved surface." Applicants herein amend claims 1 and 42 to remove the term "outer curved surface." Accordingly, Applicants respectfully submit that this rejection of the claims is obviated.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-3, 6-14, 16, 17, and 41-43 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Applicants' Admitted Prior Art (AAPA) in view of Chou (US Pat. 5,169,290), and further in view of any one of Yabushita et al. (JP 07-004388), Takinami (JP 11-294386), and Fujita (JP 2001-032794). Claims 4, 5, 30-35, and 37-39 stand rejected under 35 U.S.C. § 103(a) as unpatentable over AAPA, Chou, and any one of Yabushita, Takinami, and Fujita, further in view of Nagai et al. (US Pat. 4,647,271).

Claims 1 and 15 also stand rejected under 35 U.S.C. § 103(a) as unpatentable over Matsuda (JP 2002-168194) in view of Chou. Claim 36 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Matsuda and Chou in view of Nagai.

It is respectfully submitted that the claims are patentable over these references for the reasons set forth below.

Applicants' invention, as recited by claim 1, includes a feature which is not disclosed, taught, or suggested by the art of record, namely:

> the asperities extend an axial distance less than the axial length of the plurality of blades.

The asperities are axially shorter than the blades. This feature is found in the originally filed application at page 10, lines 17-19, and FIG. 4B. No new matter has been added.

Chou is directed to a blade for a centrifugal flow fan. Chou discloses a blade 12 having a trip 21. Chou discloses that the trip should extend laterally over generally the entire span of the blade. See Chou at column 2, lines 43-61, and column 3, lines 1-3.

Yabushita is directed to an impeller for a centrifugal blower. As illustrated in FIG. 1, Yabushita discloses that recessed parts 8 extend along the entire length of blades 7. See FIG. 1 of Yabushita.

Takinami is also directed to an impeller for a centrifugal blower. As illustrated in FIG. 1, Takinami discloses that projections 7 extend along the entire length of vanes 6. See FIG. 1 of Takinami.

Fujita is directed to a centrifugal fan. As illustrated in FIG. 1, Fujita discloses that projections 25 extend along the entire length of vanes 13. See FIG. 1 of Fujita.

Nagai is directed to an impeller for a centrifugal blower. As illustrated in FIG. 1, Nagai discloses an impeller having a plurality of blades 3. Nagai fails to disclose asperities formed on the blades. See Nagai at column 3, lines 59-66, and FIG. 1.

Matsuda is directed to a multiblade blower. As illustrated in FIG. 3, Matsuda discloses that swollen portions 11 extend along the entire length of blades 5. See FIG. 3 of Matsuda.

None of the above references discloses, teaches, or suggests asperities that are axially shorter than the blades or vanes. This is different from claim 1, which requires that "the asperities extend an axial distance less than the axial length of the plurality of blades."

It is <u>because</u> Applicants include the feature of the asperities extending an axial distance less than the axial length of the plurality of blades that the following advantages are achieved. Due to the shape of the asperities, "noise characteristic and total pressure efficiency are improved over the entire zone of the air volume and static pressure characteristic" and "the sound pressure level is significantly reduced around 2,000 Hz." See the application at page 11, lines 12-19, and FIGS. 7 and 8.

Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claims 2-17, 30-39, and 41-43 include all features of claim 1, from which they depend. Thus, claims 2-17, 30-39, and 41-43 are also patentable over the art of record for the reasons set forth above.

Applicants herewith submit a supplemental oath/declaration, as requested by the Examiner, confirming the inventorship of the claims as amended in this response.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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AJK/

Attachments: Supplemental Oath/Declaration

Dated: 2/2/10

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